



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

$$2ab(b \pm a), \quad 2ab(a \pm b), \quad \mp 2ab(a \pm b)^2/c.$$

From the first two coördinates we see that the axes of these parabolae are the bisectors of the angle at $a\beta$.

Problem 204 was also solved by D. B. Northrup, Schenectady, N. Y.

205. Proposed by L. C. WALKER, A.M., Professor of Mathematics, Colorado School of Mines, Golden, Col.

Having given any two systems of conjugate semi-diameters of an ellipsoid, the parallelopiped which has any three for continuous edges is equal to that which has the other three for continuous edges.

Remark by H. B. LEONARD, A.B., Chicago, Ill.

Solved in C. Smith's "An Elementary Treatise on Solid Geometry," page 76.

CALCULUS.

166. Proposed by T. N. HAUN, Mohawk, Tenn.

Find the volume of the solid formed by the revolution of the curve $(y^2 + x^2) = a^2(x^2 - y^2)$ round the axis of x .

II. Solution by G. W. GREENWOOD, B. A. (Oxon), Professor of Mathematics and Astronomy, McKendree College, Lebanon, Ill.

This equation represents singly the two lines $y = \pm x\sqrt{(a^2 - 1)/(a^2 + 1)}$, and the surface generated is simply a right circular cone whose area, volume, bounded by the plane $x = c$, is simply $\frac{1}{3}\pi c^3(a^2 - 1)/(a^2 + 1)$, and where $a \neq 1$.

168. Proposed F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Defiance College, Defiance, Ohio.

The tangent of what Cartesian curve makes an x -intercept always m times as long as as the corresponding y -intercept?

II. Solution by G. W. GREENWOOD, B. A. (Oxon), Professor of Mathematics and Astronomy, McKendree College, Lebanon, Ill.

Let the tangent at $P(x, y)$ meet the axes in the points A and B . Let the perpendicular from P to OY meet it at M . Call θ the angle APM .

Then $PB = m \cdot PA$, $OM = m \cdot AM$; i. e., $y = m \cdot PM \cdot \tan \theta = mx(dy/dx)$.

$$\therefore y^m = cx.$$

AVERAGE AND PROBABILITY.

145. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Defiance College, Defiance, O.

In each quadrant of a given circle, a circle is described at random. A point is taken at random in each of these circles. What is the average area of the quadrilateral formed by joining with straight lines these four points?